

VOLUME LXXX

NUMBER THREE

THE NATIONAL GEOGRAPHIC MAGAZINE

SEPTEMBER, 1941

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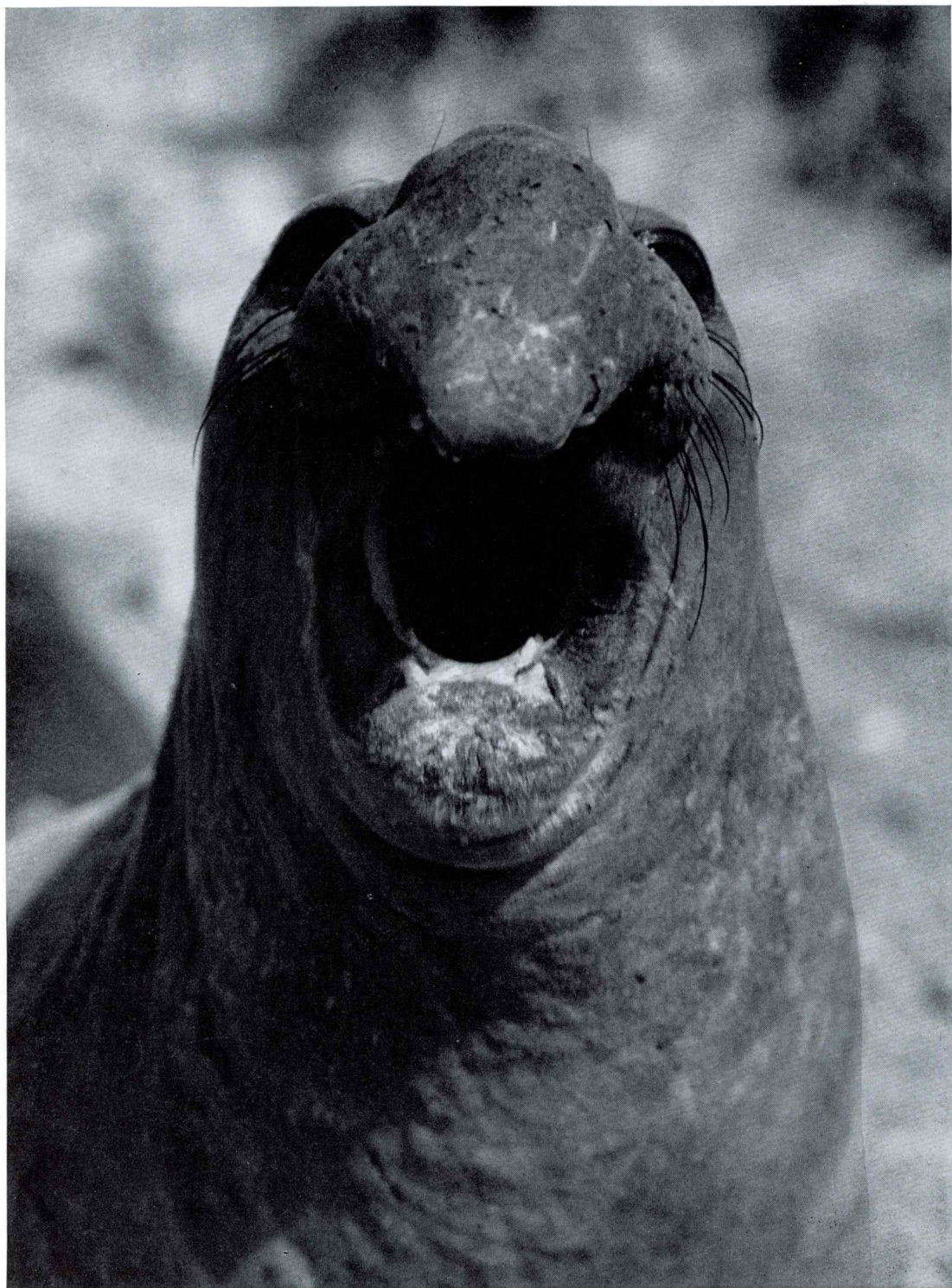
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Thirty-two Pages of Illustrations in Full Color

PUBLISHED BY THE
NATIONAL GEOGRAPHIC SOCIETY
WASHINGTON, D.C.

\$3.50 A YEAR

50c THE COPY



An Elephant Seal Yawns on a Beach in the San Benitos

"But my face—I don't mind it because I'm behind it;
It's the folks out in front that I jar"—ANTHONY EUWER

Cruise of the *Kinkajou*

Among Desert Islands of Mexico Voyagers Find Outdoor
Laboratories for the Naturalist and Ideal Fishing
Grounds for the Sportsman

BY ALFRED M. BAILEY

The Colorado Museum of Natural History

With Illustrations from Photographs by the Author and Robert J. Niedrach

WITH a storm pounding the *Kinkajou* astern, we started from Los Angeles the last day of March and headed southward toward the gale-whipped desert islands which dot the Pacific off the coast of Baja (Lower) California, Mexico.

We ran before the storm with sail set so that miles were logged at a great rate. Accompanying us offshore were white sea gulls which poised above the masts, headed into the wind, but drifted backward on the gale as fast as the boat traveled ahead.

The second day out the gulls' places were taken by slender-winged black-footed albatrosses, which barely skimmed above the waves, their dark colors making them inconspicuous against the blue of the ocean.

They would alight upon the water in our wake, seemingly feeding upon animals disturbed by the passing boat; then, when nearly out of sight, they would rise and come sailing along, wings motionless, like glider planes riding the wind currents.

Occasionally albatrosses would receive a surprise, as they would circle the ship and get into the lee of our sail. The birds would fall a few feet as the wind was spilled from under wing, and several times we saw them plunge into the ocean.

Porpoises appeared like streaks of silvery light as they followed alongside, came to the surface and dived into the white-capped waves breaking against the bow with a gleam of phosphorescent organisms.

Our host, good-natured Bill Pemberton, owner of the schooner, was accustomed to carrying naturalists and sportsmen to out-of-the-way places. The mammalogists might hang skeletons all over the rigging, the fishermen string sharks' jaws and fins on places not occupied by trophies of the mammal men, and ornithologists—despite the distress of Archie, the cook—skin birds on the dining-room table and keep their defunct victims in the icebox.

To me, as to my companions, Robert J. Niedrach of the Colorado Museum of Natural History, and Ed N. Harrison, naturalist-pho-

tographer of California, the arrangement was perfect.

Since Pemberton's 78-foot, two-masted schooner is not large enough to carry a full crew and a group of naturalists as well, we landlubbers had to lend a hand. We worked in shifts, four hours on duty and eight hours off for each of us. We had a crew of only four: Captain Bob Walsh, one sailor, a cook, and a cook's helper.

Freezing Winds in the Tropics

The first time I had to take a turn at the wheel during midnight watch, I solved the problem of what to do with the tape from packages of film packed for use in the Tropics. The tape proved ideal for hermetically sealing trouser legs to ankles and thus preventing icy ocean breezes from getting under my three pairs of trousers and all the sweaters and slickers available.

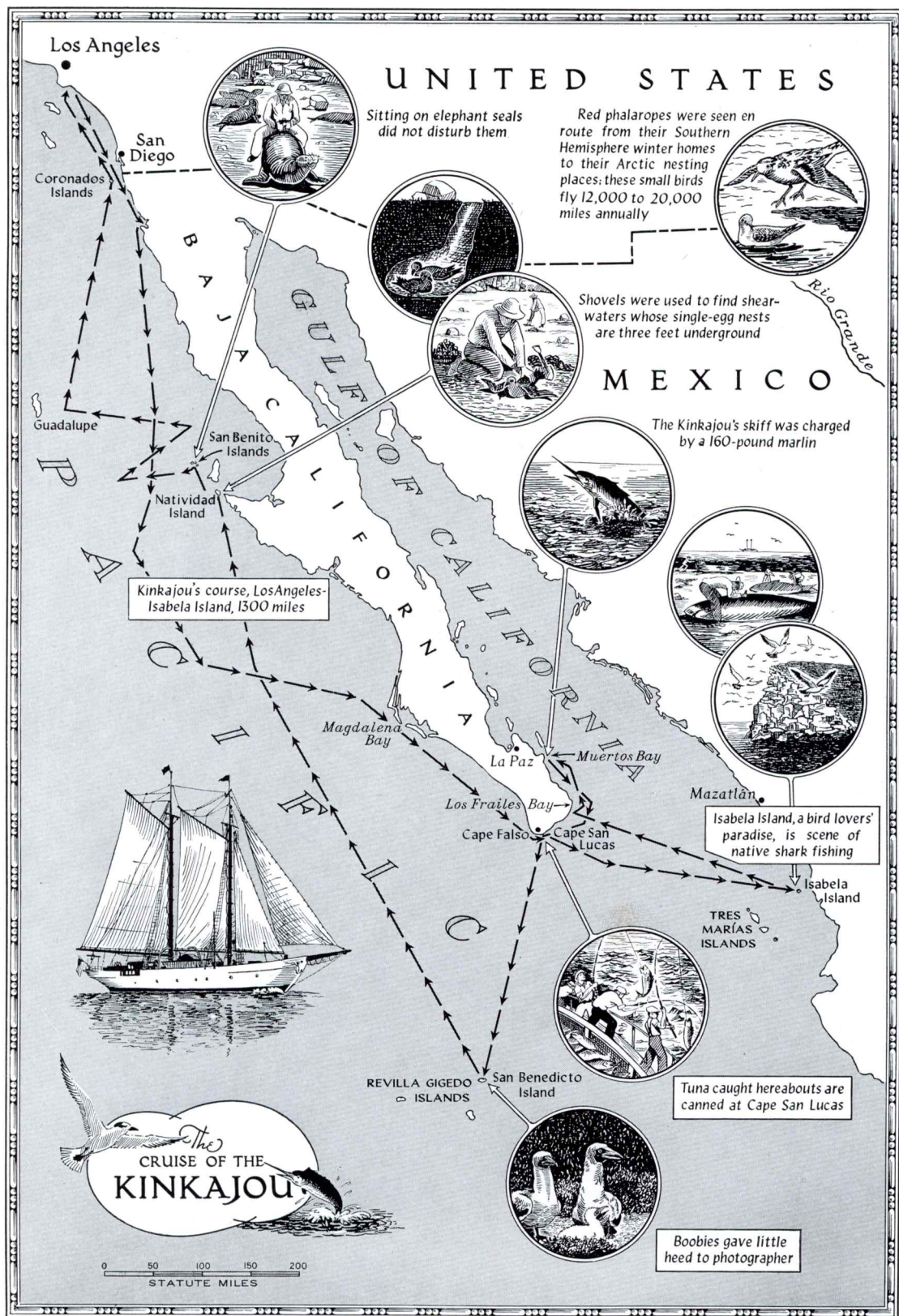
We were still running before the wind on the gray, gusty morning of the third day out when suddenly the clouds broke. Hurriedly Pemberton got out an assortment of instruments and peered at the distant horizon and the bashful sun peeping from a moving curtain of mist. He judged after some pencil figuring that we must be off the San Benitos. Surely enough, those sterile island haunts of elephant seals soon appeared off our port bow.

A big oil tanker had crashed on the rocky shore of one of the islands just before a newly installed light had begun to function.

Oil from the wreck had covered the waters and coated the feeding birds with a heavy film which caused them to become helplessly waterlogged. Soon the rocky beaches had been lined with windrows of the dead.

Clearing the San Benitos, the *Kinkajou* headed toward the tip of Baja California (map, page 340). A red-billed tropic-bird circled the boat, its plumage white against a sky of startling blue. In midafternoon a group of black fish passed to the northward, curving through the wave crests like porpoises.

Toward evening, when the wind dropped,



we were able to start the engine and proceed under power. The lack of wind seemed to have little effect on the long-winged black-footed albatrosses. They simply sailed along with scarcely a flap of wing, riding close to the surface, their great pinions almost as motionless as the wings of a plane.

As we approached the peninsula, a welcome warmth greeted us. The *Kinkajou* chugged among feeding flocks of red phalaropes, small sandpiper-like birds, still in their white plumage of winter. On their northward migration, they were leisurely working toward Siberian and Alaskan tundras, where they nest during June and early July. These fragile-appearing birds journey 12,000 to 20,000 miles each spring and fall between their wintering grounds and their nesting places.*

Late the fourth day we skirted the peninsula and cut across the mouth of Magdalena Bay. Great-winged man-o'-war-birds came cruising offshore from inland mangrove nesting places and inspected us from high in the air, like so many airplanes on a reconnoitering flight.

Evidently the gulf abounds in fish desired by birds, for a congregation of many species was assembled. Clumsy brown pelicans, floating buoyantly upon the waves, flapped reluctantly into the air when our course was too close; strings of cormorants, black against the dark water, winged toward the barren shores; and occasional small, white-breasted shear-

* For further descriptions and color plates of many kinds of birds mentioned in this article, see the two-volume *Book of Birds*, edited by Gilbert Grosvenor and Alexander Wetmore, published by the National Geographic Society.



Dick Smith, Able Seaman, at the Wheel of the *Kinkajou*

William Pemberton, owner of the schooner, accompanied the four scientists on their cruise among the islands off the coast of Baja (Lower) California, Mexico. In addition to Smith, a cook and cook's helper made up the crew. Everyone aboard the little vessel lent a hand with the anchor and sails, stood regular watches, and took his trick at the wheel.

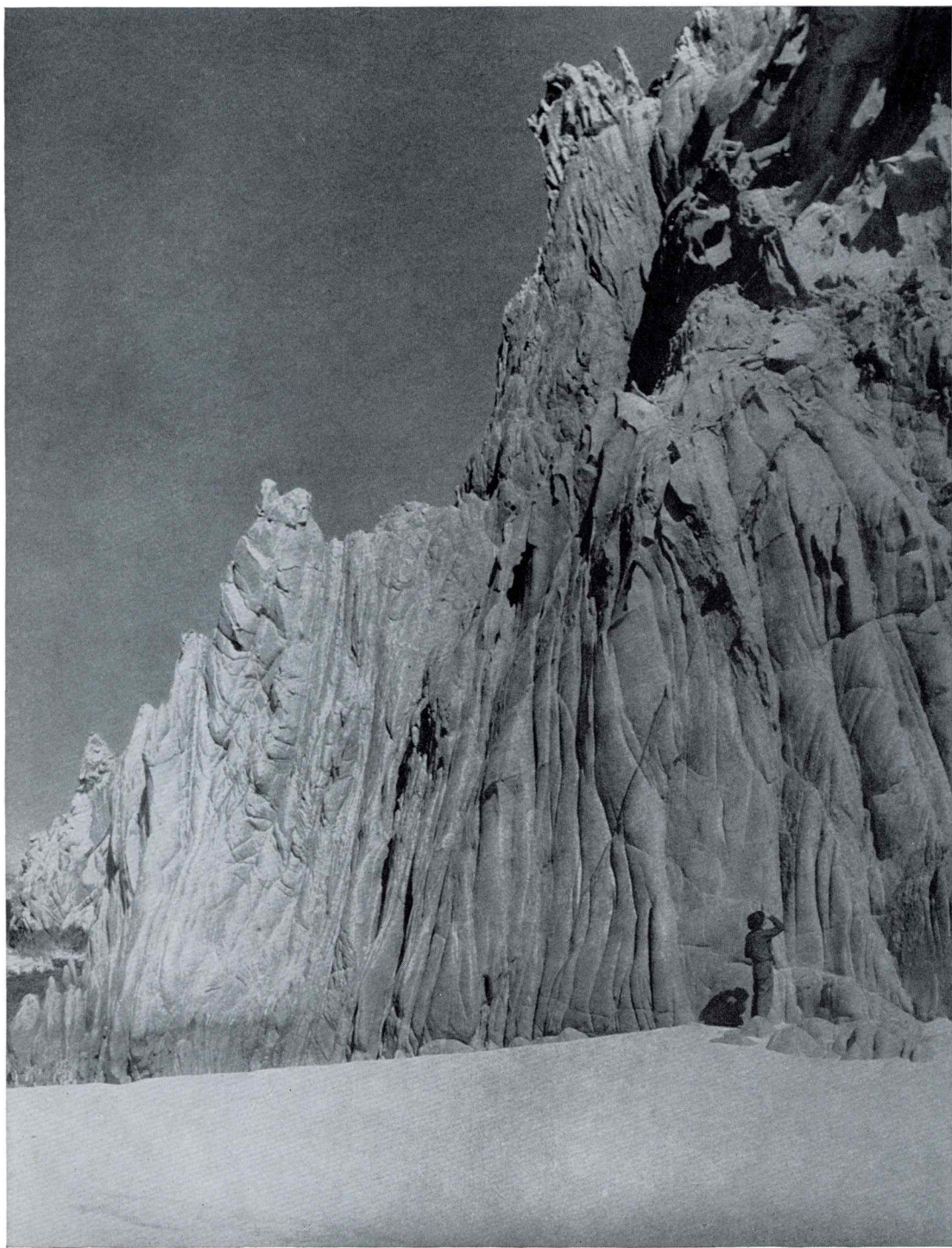
waters, which we found to be the rare Townsend's, flashed close to the surface of the waves.

Not a Ship in Sight

The peninsula is sparsely populated. Although direct steamship lines are not far offshore, we had sighted neither smoke nor sail during our voyage.

At night we all liked to lie on our backs about the steering wheel and gaze at pinheads of light in the velvet darkness. We had agreed, unanimously, that the radio should be silent, except to get the necessary time signals for navigation.

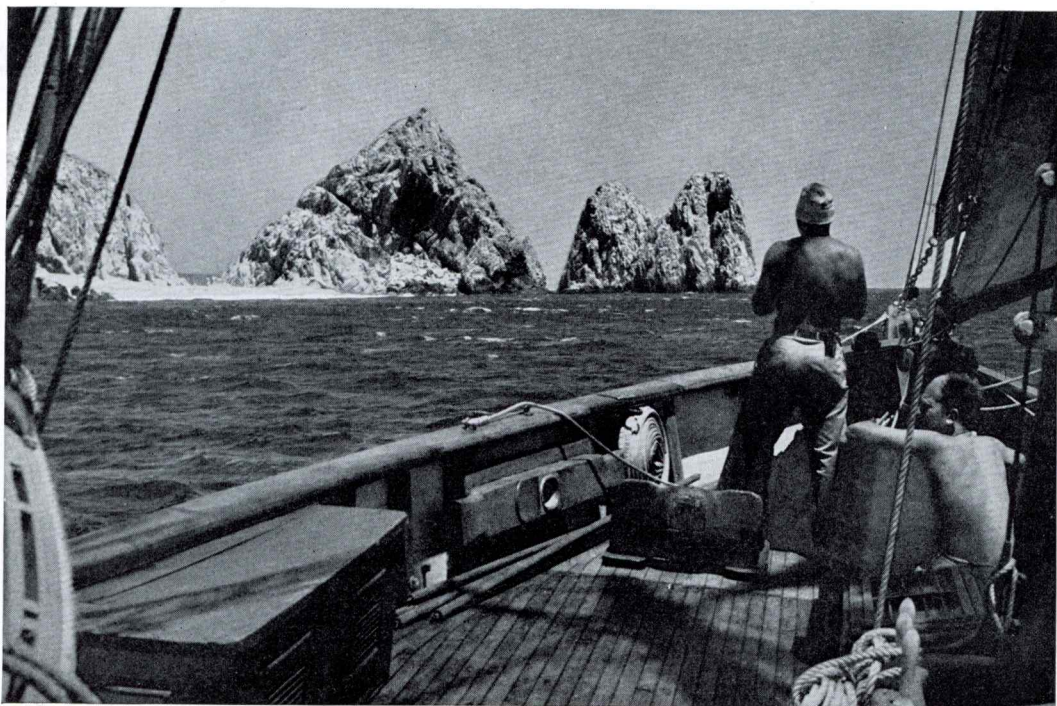
The only jarring note between dinner and



John S. Gorby

Wind and Wave Carve Fantastic Formations in the Cape San Lucas Cliffs

Here the sea has cut through one section of massive granite, leaving a narrow sandspit through which wind constantly rushes. The cape itself is a precipitous, water-worn wall, in which the ocean has cut a vast arch (opposite page). The huge batteries of rocks extend far out to sea from the tip of Baja (Lower) California. This long, narrow peninsula separating the Gulf of California from the Pacific Ocean should not be confused with the State of California, U. S. A. Actually, this arid Mexican territory was the first to be called California by the Spaniards, who believed it to be an island.



Six Days out of Los Angeles, the *Kinkajou* Skirts Cape San Lucas

Once this jagged range was a solid barrier at the tip of Lower California, but in many places the granite has been eroded almost to sea level. Rounding the line of rocks, the schooner heads southeast across the mouth of the Gulf of California. Isabela Island, near the Mexican mainland, is her destination.

turning-in time was that owner Bill had the habit of lining up a star and a bit of rigging and advising the man at the wheel that he was right angles to his course. However, as long as no rocks were near, a circular course seemed to us just as good as any other.

We crossed the Tropic of Cancer and cruised for hours close inshore along a sun-baked mountain range of rock and sand. On a high bench of this desert range is the important Cabo Falso light, which serves mariners well.

Cape San Lucas, on the southern end of Baja California, is a precipitous, water-worn wall through which waves have carved a great arch, terminated by outlying rocks white with the droppings of sea birds.

As we cruised near, a sudden northerly squall came up from nowhere and forced us to change our course.

Strong winds are not conducive to good fishing, and we had to abandon plans for angling in the waters off the cape. However, the half gale was excellent for sailing. Up went the sails—not too rapidly, for bungling amateurs do not learn in five days—and we ran before combers which threatened to climb aboard.

Our destination was Isabela Island, off the mainland of Mexico about 250 miles across the

mouth of the Gulf of California (map, page 340). There we hoped to obtain photographs and specimens for a sea bird group for the Colorado Museum of Natural History.

Isabela, Famous Bird Island

Bill Pemberton had assured us before the start of our voyage that we should find on Isabela most of the species we sought; and ornithologists had confirmed his statement.

Long before we sighted Isabel, as the island is sometimes called, numbers of great-winged frigate-birds (another name for the man-o'-war-bird), cruising overhead, indicated that land was near. As we approached, solemn brown pelicans stood motionless on spray-spattered rocks. They did not take wing until the boat whistle sent an ear-splitting blast echoing among the white-topped cliffs.

On subsequent investigation we found the island a solid mass of volcanic rock and ash with comparatively fresh flows of black and reddish lava all along the shores. The white areas of the upper reaches were merely lava and ash slopes stained from the droppings of generations of nesting birds.

We made an exploratory cruise around Isabela before heading into the harbor on the

sheltered side. Man-o'-wars with great stretch of wings and forked tails were conspicuous; but red-billed tropic-birds with their shiny white plumage and filament tail feathers trailing after were more spectacular.

Dozens of the latter, also known as "bosun birds," uttering raucous notes, flew close to the cliffs, and occasionally we could see one entering its nest in a high rock cranny.

In the cove, which serves as an ideal anchorage when mild weather prevails, we were greeted by some Mexican fishermen, who paddled out to us from their beach camp in a fine dugout canoe carved from a single tree. They were catching sharks and drying the meat and fins for the Mexican and Chinese trade. Coming alongside, they directed Bill in Spanish to the best anchorage.

Faith in Sharks Strong—on Land

Our new friends had been obtaining a fine daily catch of sharks, ranging in species from hammerheads to gigantic tigers, by anchoring setlines far out at sea, with barrels for floats.

One look at the 13-footer which the natives still had in their canoe spoiled our anticipation of a swim. Of course, as naturalists, we all knew that sharks rarely attack humans, but we were not too sure that the sharks knew it. We took our daily plunge close to shore thereafter, keeping watch for triangular fins.

Our own fishermen began overhauling tackle the moment the anchor was dropped. Lowering the launch from the davits, three of them set out on an excursion intended to deplete the countless numbers of marlin said to infest the sea at the south end of the island.* They took along some defunct flying fish to tow as bait through the tepid water for hours on end.

Hoping to harpoon some of the denizens of the deep under the eye of our motion-picture camera, Captain Bob and Sailor Dick stayed behind. They sensed a golden opportunity when some manta rays, or devilfish, came cruising by the *Kinkajou*, all submerged but the tips of their gigantic wings.

The rowboat was dropped overboard and the portable motor mounted in the stern; then, clad in swimming suits, the adventurers climbed aboard. In the depths of the clear, still water could be seen myriad green, red, and gold fish such as are found only in the Tropics.

A half-dozen mantas were idling near. Some were so close to the surface that they looked like animated barn doors, but a fellow of moderate size, the tips of his wings only 9 or 10 feet apart, seemed the likeliest victim.

* See also "Fighting Giants of the Humboldt," by David D. Duncan, NATIONAL GEOGRAPHIC MAGAZINE, March, 1941.

Bob fitted the harpoon head to the shaft and arranged a coil of rope nicely in a bucket, while Dick handled the tiller. The boat headed directly for the manta, and Bob stood up in the bow and lunged the harpoon downward with all the power of his 6-foot body.

Harpooning a Giant Manta Ray

There was immediate action, but not what was expected. With a side flop of a huge wing the giant ray splashed the boat nearly full of water, then disappeared into the depths. Not a foot of line was taken from the bucket. Instead of lodging in the manta's body, the harpoon head had come off the shaft and the pole had struck into the creature's wing. Bob with obvious chagrin pulled in the dangling harpoon head.

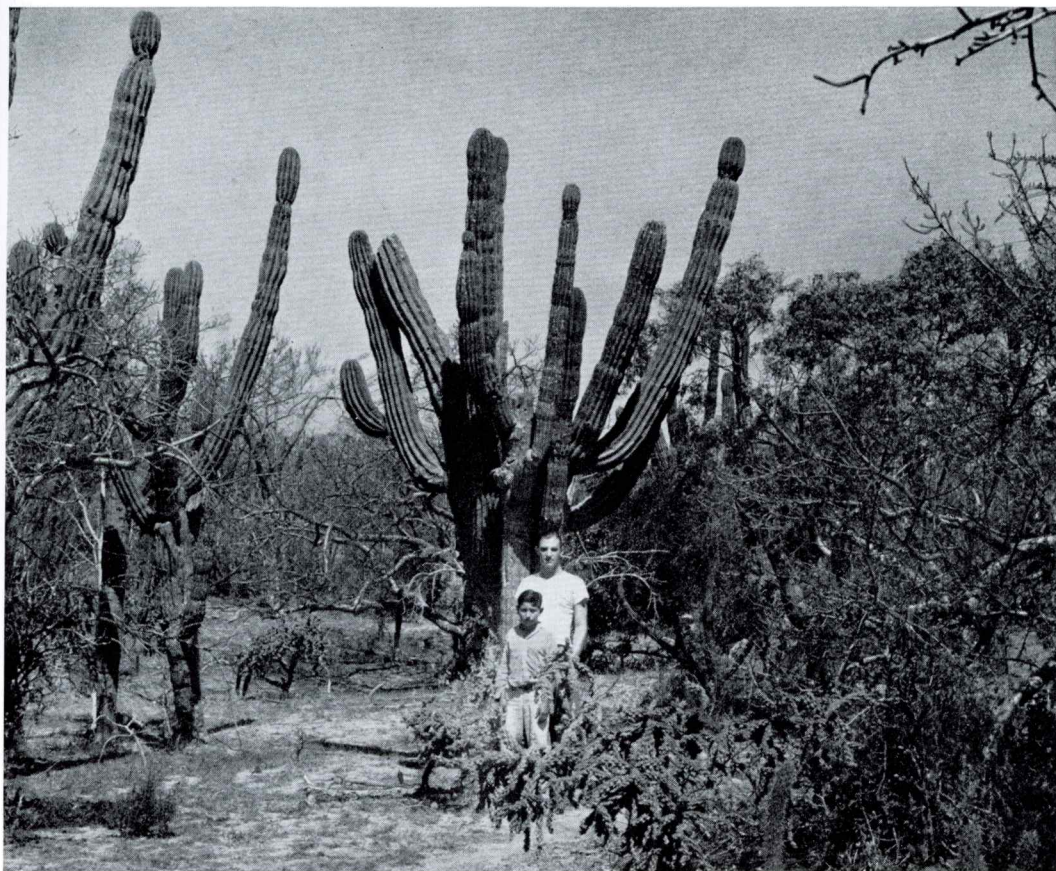
The manta seemed little perturbed, for it soon came to the surface and swam along, with the pole sticking up from its wing like a rakish periscope. When last seen, the intended victim was headed seaward.

Our fishermen came in at dusk, sunburned and disgusted. Their flying-fish bait had lured several kinds of fish, but they had not even sighted a marlin. Except for Archie the cook, no one was interested in the several 60-pounders of unwanted species they tossed on the deck.

Isabela proved ideal for our museum project. There was coral sand stretching to dark lava reefs exposed at low tide, and points of the island extended on either side, enclosing a crescent-shaped bay which made a perfect picture to reproduce in our panoramic background. The rock formed by ash and the excretions of generations of birds has been honey-combed by time, and large iguanas scurried to safety in the crannies or in burrows under the wiry bunch grass.

Hundreds of pairs of blue-footed boobies, quaint heavy-billed sea birds, had scooped shallow nests in the coral sand, and pairs of eggs or white, downy young were scattered throughout the colony (Plate I and page 346). Like many other seafoal, the several species of boobies have not learned to fear man. They stood about shuffling their feet self-consciously, and occasionally one would run across the ground and rise awkwardly into the air.

For some time man-o'-war-birds had been nesting in large colonies in the 15-foot bushes (*Crataeva tapia*), and their white, downy, piratical-looking young snapped rubbery beaks when we came under the nesting trees (Plate VI). White-breasted females were incubating eggs, and black, red-pouched males were holding down empty nests to prevent others from stealing the nesting material.



Cardon Cacti Stretch Long Arms Skyward in an Arid Stretch near Cape San Lucas

The tall plants, some 30 feet high, tower over the tangle of scrub desert growth. Cardon and San Lucas woodpeckers nest in holes in the thick stems. Early in the morning, before heat rising from the sand becomes unpleasant, vultures like to perch, with wings outstretched, on the tips of the cardons to take sun baths. In the rainy season the cactus bursts into bloom.

Throughout the Tropics these great-winged sea bandits prey upon the boobies and terns. They float in the air on outstretched wings, like a flock of airplanes waylaying a passing boat, while the boobies are diving for fish, and then swoop down for the spoils. As a squawking booby tries to dodge shoreward, a sea hawk glides swiftly after it, grabs it by the tail, and gives it a flip in the air sufficient to cause it to disgorge its cargo. The man-o'-war catches the food before it has fallen many feet.

Isabela Island, a Tapestry Woven in Red

On this little desert island artist Nature has made red the predominant color. The dark volcanic rock has a ruby undertone, as if to remind one of fires long dead; the dried fruit and leaves of the *Crataeva* bushes are green and reddish brown; small lizards give a flash of red; thick-clawed land crabs, which

scuttle to places of security in their burrows or among rocks, are a bright maroon.

Among the dark boulders which line the steep, breaker-beaten shores are thousands of crabs of scarlet brilliance. They scurry over the rocks in unbelievable numbers, anchoring themselves with ease against the ceaseless efforts of the surging water.

On the reefs flocks of Heermann's gulls, slate gray, with light heads and reddish beaks, cry plaintively, "Help-help," as they take to the air. The satiny-plumaged, red-billed tropicbirds, so evident against the clear blue sky, and the male man-o'-war-birds are others that carry out the same color scheme. The bright gular pouches of the latter are inflated until they resemble the toy balloons of circus day.

Many of the swimming fish are also touched with red.

Climbing all over the island with cameras on our backs, we found that each species of



"Keep Your Distance, Sir"

A blue-footed booby, most pugnacious of all the guano birds, refuses to abandon its chick despite the close approach of the author, on San Benedicto Island. The bird has incredibly blue legs and feet. Both mother and chick produce resonant, ear-splitting calls (page 344).

bird had its favorite habitat. The blue-footed boobies liked open places, where they would have little difficulty in taking wing; the man-o'-wars nested in colonies on the tall bushes; the noddy terns preferred the high walls of the offshore islands for their nests; and the tropic-birds used crannies in the rocks or holes under boulders of steep slopes along the sea.

It was difficult to get pictures of the tropic-birds, because they nested in dark places. However, we found one sitting on its egg, in a place where we could remove a few rocks and get light for photographs.

Once a pair was located sitting dovelike, breast to breast, with their long tail feathers dangling. They always protested rancorously and were ready to use their sharp, serrated beaks at the least provocation.

Our stay on Isabela was made more interesting because of the presence of the shark fishermen. They were dark-skinned Mexicans of Mazatlán and points southward, with only a few words of English at their command. Except for Bill, who was so busy trying to catch fish he was of no help to us, our Spanish was confined to *adiós* and *hasta luego*, yet with gestures and facial grimaces we were able to carry on extended conversations.

A brightly colored king snake, with red the dominant color, had been reported from the island. We asked the Mexicans about it by drawing a wavy line in the sand and making writhing motions with our hands. Grinning, they all nodded their understanding.

Snakes of Many Colors

We held up a peso. As a result, three of the boys brought in a beautiful specimen, banded with black, red, and yellow. It was the first large one collected on the island, and may prove new to science.

The Mexicans greatly feared this snake, saying it was poisonous, and we ourselves were none too sure of its harmlessness. Unfortunately the king snake and the poisonous coral snakes of the south look alike, except for the arrangement of the conspicuous colored bands. The Mexicans told us that snakes were exceedingly abundant during the rains, which would come in six weeks. Apparently the beautiful reptiles remain inactive during the dry season.

The natives said the snakes could be seen in numbers after dark. Eager for more specimens, we got out flashlights for ourselves and kerosene flares for the Mexicans and put in part of a night combing every cranny of the



Pert and Wary on Land, the Marine Iguana Much Prefers the Water

In the sea the lizard keeps its legs tight against its sides and propels itself by snakelike wriggles of tail and body. Here it is sunning itself on the beach at Isabela Island.

area adjacent to the harbor. We annoyed a lot of man-o'-war-birds and threw boobies into panic flight, but found no snakes.

After the fruitless search we sat on the beach, watching a late-rising moon which threw a band of light across the harbor entrance. Flocks of sooty terns swarmed overhead, telling the whole world in strident voices that they were "Wide awake, wide awake."

"Gringos" and Mexicans taught one another English and Spanish until nearly dawn. The natives told how they made setlines with hooks every fathom or so apart, and put them 10 miles from the island where sharks congregated on a shallow bench. They used fish for bait, they said, since only the old monster sharks were cannibalistic enough to eat shark meat. In the mornings they fished and after midday took care of their catch, drying fins and tails and salting meat. The skins of even the largest sharks were not saved.

Off Again—and Hope for Marlin

Our work on Isabela completed, we bade reluctant farewell to our Mexican friends and headed the *Kinkajou* back across the mouth of the Gulf of California, to the southern end of Baja California.

Our fishermen, who had been feeling for

some time a trifle let down that they could catch nothing over one hundred pounds except sharks, were anxious to try other waters where marlin lurked behind every wave.

The second morning out from Isabela we anchored in sheltered Los Frailes Bay. A native fishing boat and a yacht, the *Black Swan*, were there ahead of us, and a visit to the latter proved encouraging to our fishermen. Marlin were running, three having been taken the day before (Plate I). The kindly yacht owner even had some extra bait he was willing to donate for the good of the cause.

Our eager marlin fishers were on their way to the gulf in short order; and bird men, mammal men, and bug hunters landed rather ignominiously through a line of surf which welled up on the sharply sloping beach. By "ignominiously" I mean upside down. The line of musically rolling waves looked so innocent that we did not take the pains to back our way in, and a large comber caught us.

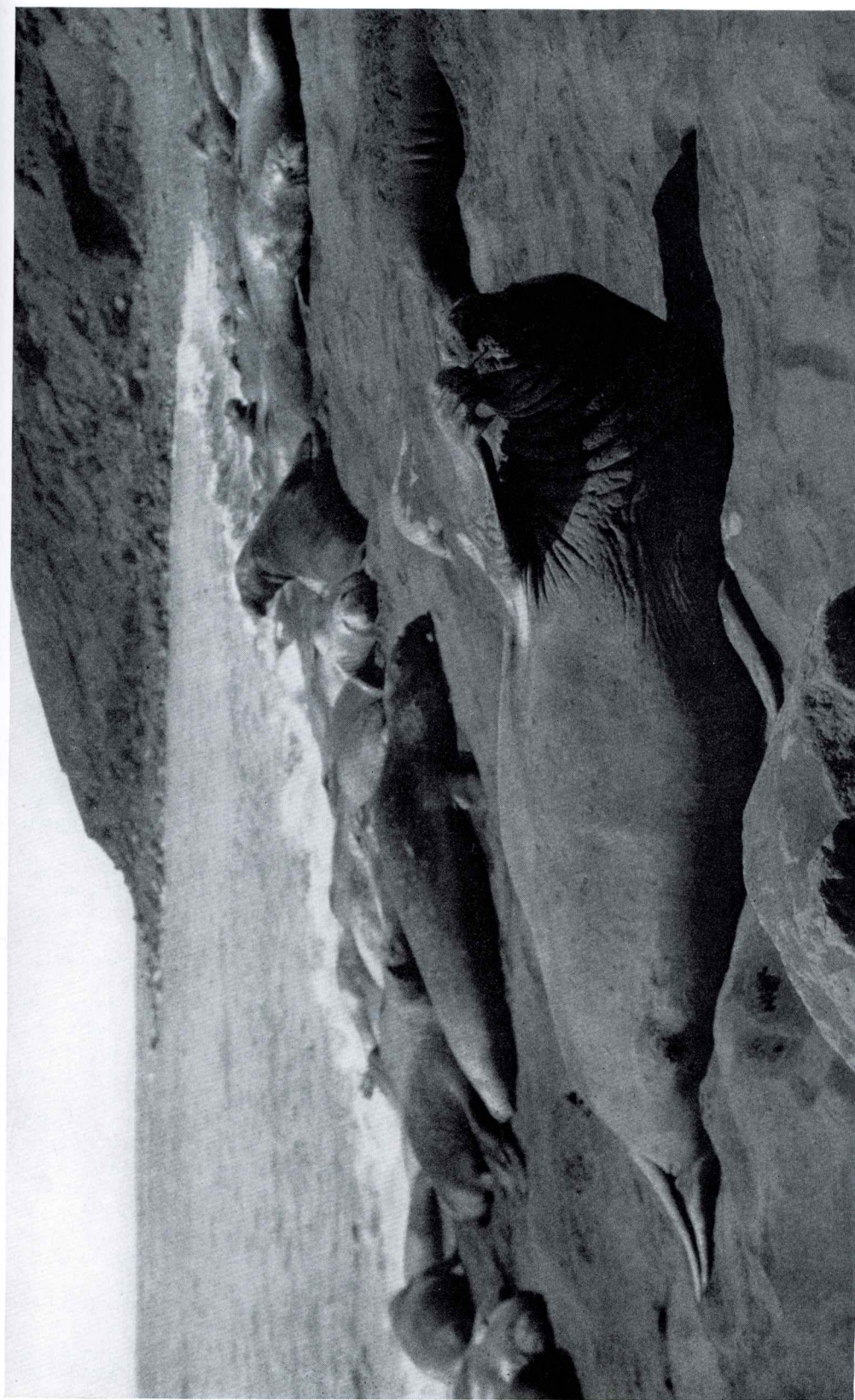
On the beach, where caracaras, vultures, and ravens were feeding upon a shark's carcass, were two bearded Mexicans, dressed in the usual blue jeans, sandals, and straw hats. They invited us to their little ranch, a snug place tucked away in an arroyo in the midst of desert country. The womenfolk were busy



No Flies on This Old Fellow—He Tosses Sand upon His Back to Drive the Pests Away

Laurence M. Huey

The elephant seal makes up for the absence of a switching tail by dexterously using his flippers. The blanket of sand also protects him from the hot rays of the sun. During cool nights, and on cold days, these denizens of Guadalupe Island root out trenches in the beach and lie in them to keep warm.



Simple Remedy for an Itchy Nose—Scratch It!

Laurence M. Huey

The flexible trunk of the elephant seal attains a maximum length of about 16 inches and apparently serves no useful purpose. Noses of the females are not so long.

drawing water from their open well and pouring it into troughs for the cattle and goats gathered in the dooryard, while a couple of youngsters were trying to corral a frisky calf.

We devoted the several days that the *Kinkajou* remained anchored in Los Frailes Bay to investigating the thorn scrub of barren hills and valleys. Most of the birds of Baja California resemble forms found in the desert area of the southwestern United States, but because of isolation are of different races. Consequently, the area is of unusual interest to the bird man.

Verdins, brown towhees, thrashers, gnatcatchers, brilliantly colored cardinals, and scolding cactus wrens were common in the impenetrable tangle of thorn scrub and yucca. Long-tailed mockingbirds, which gave a flash of white in the wing as they flew to cover, were the most conspicuous.

Because the deserts of our own country are ablaze in springtime with flowering plants, we were surprised not to find similar conditions in the Cape region. Spring there is governed by the rains, which would not come until a few months later. Consequently, the elephant trees, grotesque shapes with smooth, soft bark, had put out only a few leaves, and the great cardons, the tree cacti common in the area, showed their inconspicuous flowers only here and there (page 345 and Plate II).

A Desert Vocal with Birds

The bird life, however, made up for lack of luxuriant vegetation, and we each sacrificed several shirts prowling among plants which seemed to snatch at us with outstretched claws. San Lucas quail were common, and we often heard the moaning notes of the little males in the heavy cover, although to get a glimpse of them was another matter. They rarely took wing at our approach, but merely moved off into the vegetation where they were safe.

At Los Frailes Bay our mammalogist, Kenneth Stager, who had been catching bats under the thatched roof of our Mexican friends' house, offered some natives 10 pesos to collect for him 10 specimens from a bat cave which they told him they had found several miles inland. They borrowed a flour sack and started off.

Kenneth was out hunting when the Mexicans returned, and unfortunately he had carelessly thrown his pocketbook on his bunk. Captain Bob had heard the bargain—a peso a bat—but not the stipulation of 10 as the limit. The natives saw no reason for returning with a mere 10. They brought 63, and Bob paid them 63 pesos for an oversupply of bats

that proved to be a common California form!

After three days our fishermen were ready to admit defeat. They had seen lots of marlin and hooked several, but Bill Pemberton alone had brought one to gaff. Of course there was the usual run of pan fish for the cook, little things weighing between 30 and 60 pounds, but these seemed to bring no joy. Ray Gray, most ardent angler of the crowd, had got nothing for his efforts but a case of sunburn that kept him awake nights.

At midnight, hour for me to go on watch, we upped anchor, rounded into the gulf, and headed northward. We had been warned against sleeping on watch, for the commercial fishermen often worked without lights to prevent rivals from discovering them when they found good schools of fish. Mindful of the warning, I was keeping a sharp lookout from the bow when I noticed what seemed a bright star directly on our course. The star was a lantern at the masthead of a boat coming our way. Barely in time we swung to starboard!

A Ghost Mining Camp at Muertos Bay

We dropped anchor in Muertos Bay at 6 a.m. All along the shore is a fine sand beach, and a broad valley grown with huge cardons extends northward to the divide. Pounded beyond repair by the force of the onshore waves, an old pier which once served a mine in the back country runs out into deep water. This pier, an old mill, and an abandoned railway are all that remain of someone's dream of wealth.

Among the huge cacti cardon woodpeckers abounded, Cape gilded flickers flashed across the pale blue sky, and vultures soared everywhere. There were several forms that we had not seen down the coast, most interesting being the yellow-legged gull, one of the rarest of North American sea birds. Its breeding ground seems to be confined to the Gulf of California, and few are observed elsewhere. Birds of this species cruised about our boat for scraps we threw overboard to lure them near.

Along the sandy beach we saw Belding's plover and occasionally willets loitering on their northward migration. Migrating flocks of lark buntings, the State bird of Colorado, had paused for a few days' rest in the dense tangle of cactus which formed an impenetrable mat over a large part of the valley. In Colorado they frequent open plains.

The only reptiles we encountered were two rattlesnakes. Possibly it was too hot for them and they were waiting for the chill of evening before venturing from places of hiding. Lizards of several species were common enough,



Osprey Nestlings, Sensing Danger, Play Possum

The youngsters, in their spacious home of sticks, twigs, and weeds, lie motionless as the camera clicks. Had the parents been home, pandemonium would have broken loose. Adult ospreys, or fish hawks, are noisy around the nest, calling, whistling, and scolding shrilly whenever an intruder appears.

especially one that had the habit of getting up on its hind legs and skidding along with reckless abandon.

Marlin, eager for bait, abounded in Muertos Bay. Within three hours the first afternoon our fishermen landed an old swordbill each. They beamed with triumph.

The next day while Bob Niedrach and I were chugging offshore with our portable motor attached to the skiff, endeavoring to find some of the murrelets which occur in the gulf, we saw the launch approaching. Ray was in the stern with his line far behind, and Bill was at the wheel shouting rough advice that could have been heard at Cape San Lucas. Ed Harrison crouched on the deck forward with his camera ready for action.

Suddenly a big marlin hit the lure and came from the water with a rush. Ray sat back in his harness, and the marlin gave one more leap into the air. Then, instead of sounding or attempting to take more line, the fish headed directly for the boat!

Whether it was charging or whether it was confused and did not know where it was going, we shall never be sure. It covered 75 yards so rapidly that the boys did not have time to circle out of its path.

With a leap it came out of the water and landed half on the deck, just forward of midship, 160 pounds of violence. The anglers were lucky it landed forward and not in the cockpit, for it fell back into the water after smashing only the cowlings.

The blow took the fight out of the marlin, and Ray soon had it to gaff. Two-thirds of its sword had been broken off, and what remained was just a big stump useful as a ram.

Though our sportsmen were reluctant to leave their fisherman's paradise, we sailed from Muertos Bay in the "graveyard watch" as usual and continued down the gulf toward Cape San Lucas with a fair wind kicking the *Kinkajou* merrily along.

The crescent-shaped harbor at Cape San Lucas was alive with anchored small craft, ranging from fishing boats which supplied the local tuna cannery with its raw product to pleasure yachts from California.

Mexican Officials Hospitable

The quarantine officials, white-clad Mexicans, came off in a rowboat propelled by a perspiring gendarme, who had strapped about his middle a revolver as big as a miniature cannon. Once aboard our craft he stalked

back and forth nervously, while the officials were below partaking heartily of refreshments. These representatives of the Mexican Government hospitably invited us to go ashore, expressing the hope that we could visit them at their headquarters. Later the villagers treated us most cordially, youngsters vying with one another to show us where specimens could be observed.

An excellent cannery at the head of the harbor means much in the economic life of the people of the cape. Like women "herring chokers" of Alaska, scores of girls work in the factory preparing fish caught by the men. A siren, sounded whenever a fish boat comes in, announces that workers are needed, and a colorful throng is soon plowing through the loose beach sand to the cannery.

The tide line adjacent to the cannery is an ornithologist's delight, for hundreds of immature yellow-legged gulls, vultures, ravens, and caracaras assemble there to feed on meat washed up by the oncoming waves. We saw a couple of pigs competing with the birds and seeming to be getting their share.

Field days in the Cape region are a constant delight, if one starts early enough in the morning. Because the country is more open than that at Los Frailes or Muertos Bays, there is no impenetrable tangle to tear one's clothing. Cardon forests surround the wooded plain on which the Mexicans have their straggling little town.

Back in the hills we came upon homes loosely built to give maximum ventilation. The majority of the houses had neat flower gardens, and most of the fences were covered by a vine with pink blossoms (*Antigonon leptopus*). Later we found these vines in full bloom throughout the forests of cacti. The student of desert plants would have enjoyable field trips in this region; for, in addition to the giant cardons 20 to 30 feet high, there are cacti of many species, ranging from the tree cactus to crawling forms. In regions adjacent to settlements, the cattle have opened trails.

I had the cook's assistant as a camera bearer on one occasion, and he soon had several barefooted helpers. How the boys could travel through the thorn-covered mountainside without being crippled for life was a mystery to me.

Countryside a Veritable Aviary

The cardon woodpeckers were nesting in holes in the tall plants, and the sharp rapping of birds upon dead wood reverberated through the forest of cactus. The abundance of these birds, Cape gilded flickers, and San Lucas

woodpeckers seemed to indicate that conditions were right for the survival of insectivorous species capable of boring into wood.

The soft note of the white-winged dove, *la paloma* of the Mexicans, came softly from every hillside; cardinals were calling, though just a little differently from those back home—and their near relatives, the colorful male pyrrhuloxias, sang from the highest cardons.

Small mammal life was not abundant, a few ground squirrels by day and bats by evening being all we encountered. The reptile men, however, had a grand time, with lizards and snakes to be had everywhere. One particularly interesting snake was a large white racer which looked like a ghost as it slid rapidly through the scrub tangle.

While the *Kinkajou* was anchored at San Lucas, our fishermen trolled around the harbor and caught spotted bonito and cabrilla to their hearts' content. They nearly caused a riot among the Mexican boys every time they came near the wharf, for the boys knew that the catch would be given away. We all enjoyed watching the youngsters scramble and go away so loaded with fish that they could hardly walk.

I would have been willing to stay indefinitely at San Lucas, but after a few days I noticed a faraway look in Bill's eyes as he began to tell me of the interesting birds to be found on San Benedicto of the Revilla Gigedo group 250 miles to the southward. A little judicious questioning revealed that the waters surrounding this volcanic island swarm with fish which with open mouths welcome anglers.

According to invariable practice, we pulled anchor at midnight. The schooner ran before a howling wind that laid her on her side, but we put knots behind at a remarkable rate.

No Place for a Crusoe

Robinson Crusoe would not have done very well had he landed on San Benedicto, which rises nearly a thousand feet from the sea, for it is built of igneous rock and volcanic ash that look as if they had been deposited in the last few days.

The only plants were a few low-growing bushes and fields of tall grass, the latter bearing a seed which must have been invented by the ruler of the melting places of igneous rock. It penetrated socks, trousers, and shirts. A day ashore meant new clothing, for the seeds could not be pulled out.

Pemberton was right about the birds. We found that this little island had an avian population derived from the islands of the Pacific rather than from Mexico. Wedge-tailed shearwaters lived in burrows deep in the volcanic

Birds and Beasts of Mexico's Desert Islands



Kodachrome by Ed N. Harrison

While the Cook Looks on, a Proud Angler Weighs His Marlin

One fish charged the boat from which it had been hooked, breaking off part of its formidable sword. Some varieties of marlin weighing more than 900 pounds have been caught by rod and reel.



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Kodachrome by Alfred M. Bailey and Robert J. Niedrach

A Blue-footed Booby Family, Father, Mother, and Baby

These fish eaters breed by the hundreds on Isabela Island, off the west coast of Mexico.



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Kodachrome by Alfred M. Bailey and Robert J. Niedrach

Before a Backdrop of Arid Mountains, the *Kinkajou* Lies at Anchor in Sun-drenched Muertos Bay

This harbor, near the southern end of Baja California, on its east coast, abounds with marlin (Plate I). In the foreground are weird cardon cacti. Woodpeckers live in these strange "trees," digging holes in them for their nests.



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Kodachrome by Ed N. Harrison

Her Mains'l Drawing Full, the *Kinkajou* Rolls Along Through Azure Seas

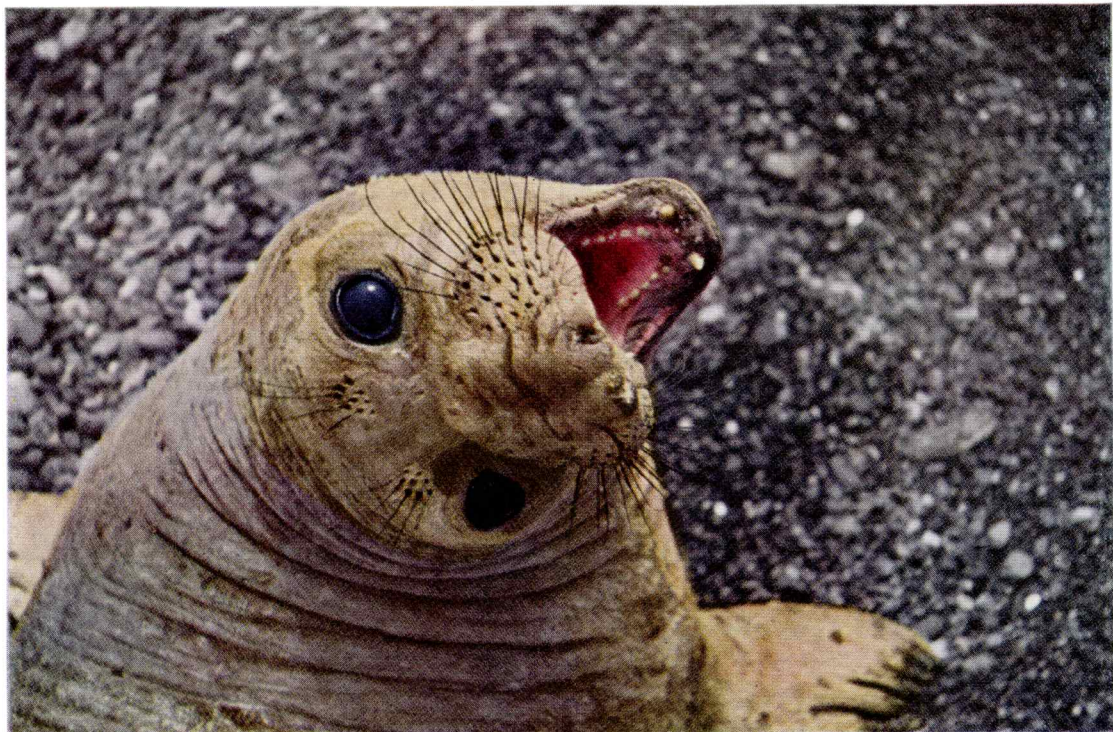
One man takes his trick at the wheel while his companions relax on the sunny deck. Scientists doubled as sailors on the cruise of the 78-foot schooner to Baja California to study fish, birds, and mammals.



Kodachrome by Alfred M. Bailey and Robert J. Niedrach

In Clumsy Anger an Elephant Seal Tries to Attack an Intruder

So awkward and heavy are the animals on land that their lunges are easily avoided. The seal in the background under the man's hand is shedding its skin and hair.



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Kodachrome by Ed N. Harrison

Big Eyes Indicate the Elephant Seal Hunts Much of Its Food at Night

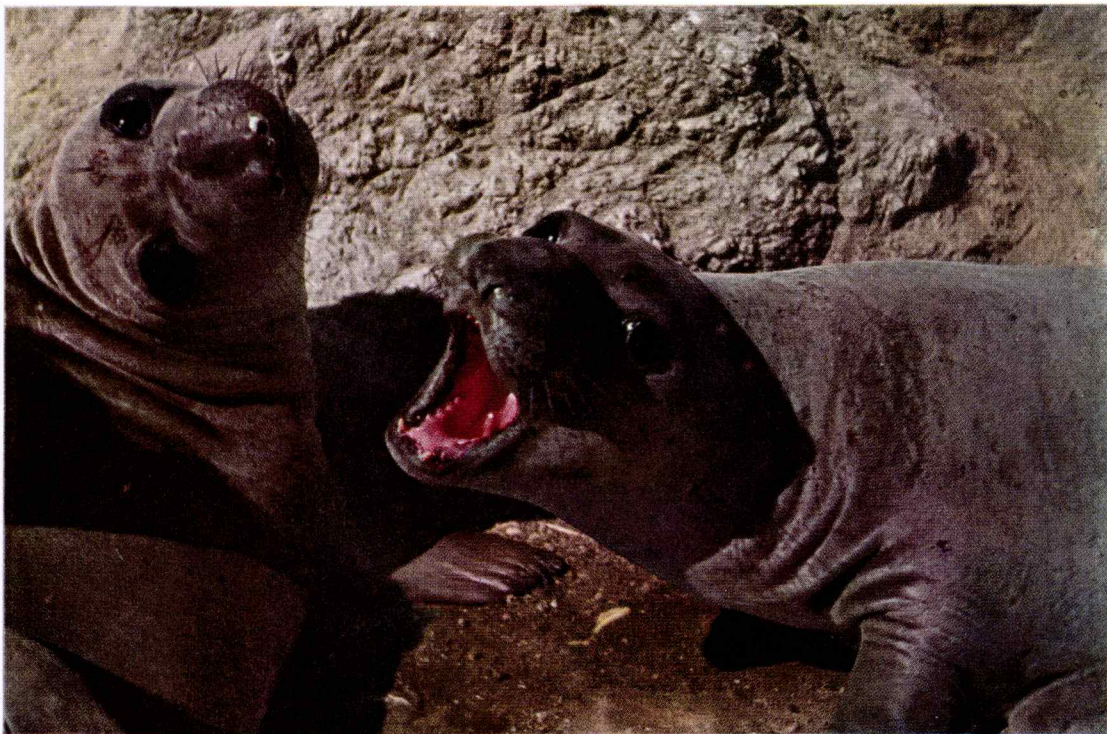
They are known to eat squid and in captivity feed greedily on fish.

Birds and Beasts of Mexico's Desert Islands



"Aw, Won't You Please Go Away and Let Us Sleep?"

Young elephant seals on the San Benito Islands made no move to flee when approached. Sleeping females and young do not object even to being walked upon.



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Kodachromes by Ed N. Harrison

Teeth of an Elephant Seal Can Inflict an Ugly Wound

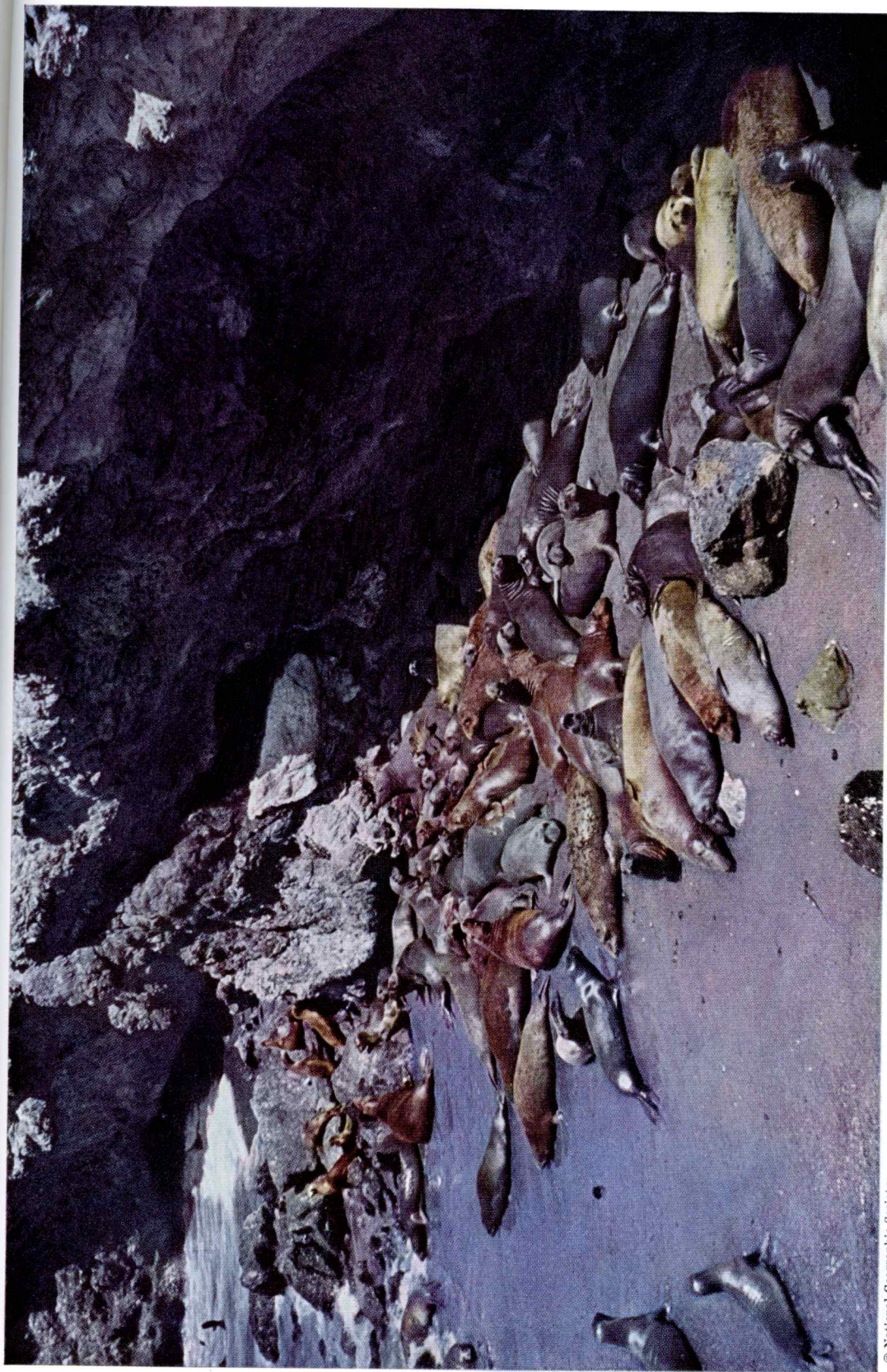
When cornered, the animals growl in protest and charge awkwardly with open mouths.



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Kodachrome by Ed N. Harrison

Man-o'-war-birds Often Dive at Other Birds to Force Them to Disgorge Fish, Then Swoop Down and Scoop Up the Booty in the Air
 Aptly called "pirates of the air," they also catch fish for themselves. The red throat pouch of the male in center is inflated only in the mating season. Next to him are a female, and a white-headed young bird born the previous year. Isabela Island.



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Like a Pile of Fat Sausages, Elephant Seals Doze the Day Away on a San Benito Beach

Kodachrome by Ed N. Harrison

The flexible snout or proboscis is the reason for their name. Only a few of the animals exist and they are protected by the Mexican Government. A larger variety is found off the southern tip of South America.



Kodachrome by Ed N. Harrison

Red-billed Tropic-birds Are the "Cliff Dwellers" of Isabela Island

Long white tail feathers of the adult show well against the dark crannies of the cliff, favorite nesting places of these birds. The down-covered baby is only 8 to 10 days old.



© National Geographic Society

Kodachrome by Alfred M. Bailey and Robert J. Niedrach

Its Beautiful Plumage Thrives on a Diet of Fish and Squid

The red-billed tropic-bird dives for its food and wanders far at sea between breeding seasons.

ash, and when evening came they swarmed over the water in unbelievable numbers. It is hard for one to appreciate the countless thousands of winged creatures of many species which throng the out-of-the-way islands of the world—each species to itself and often-times practically the only kind of bird found at a given place.

There were three kinds of boobies: blue-faced, red-footed, and Brewster's. Their habits were similar to the blue-footed species on Isabela, but their plumage was entirely different. All were nesting on the ground, the Brewster's in scattered pairs in the long grass along a dry arroyo, the others in colonies. The blue-faced boobies' nests were mere depressions scattered at least 15 feet apart over several acres of open ground (Plate I and page 346). The strikingly colored red-footed species built compact grass platforms in the dense stands of dry vegetation. All birds were incredibly tame, and the photographer could take pictures at will so long as he stayed out of range of the rapierlike thrusts of sharp beaks.

The man-o'-war was the same species I had found on islands of the Hawaiian group; its beak was more colorful than that of the Isabela bird, and its wings had a light-colored bar which was conspicuous in flight. Unlike the white-headed birds near the Mexican coast, the countless young in the platforms in the two-foot grass had cinnamon-colored heads.

We found holding down empty nests males with great gular pouches fully inflated, so that a group from the distance looked like a field of red flowers. An occasional man-o'-war would rise laboriously into the wind, the brightly colored bag wobbling to and fro. The movie cameras were set in the middle of the colony, and, as long as we moved slowly, the birds did not take alarm.

The sole land bird observed on this desert island was a little rock wren. Its song, reminiscent of our own western wren, was the only bird music to be heard.

Hooking the Wahoo

The sport fishing proved unexcelled. There were no marlin, but instead one of the gamiest of all fish, the wahoo. We enjoyed watching the men in the launch hook one of these fast fellows, and see it climb out of the water, skimming the surface at express-train speed. It was usually half exposed as it leaned against the line in its terrific effort to shake the hook. The wahoo were of rather equal size, running about 70 pounds of fight.

The fishermen could not stay in one place long, however, because of the sharks, which

were continually cutting hooked fish in two. These great predators became so intimate that they followed the launch and lay close to the surface when the boat was at rest. One big tiger almost as long as the launch took half a wahoo at a gulp, and then came within arms' length of the boat as the head was pulled aboard.

"Look at the devil," Ray said. "What does he want now?"

"He's waiting for the other half," Bill told him, and the remains were chucked overboard.

The old shark turned a rather baleful eye on the fishermen and then leisurely surged ahead, taking the fish and disappearing into the depths.

Lonely Natividad Island a Natural Flying Field

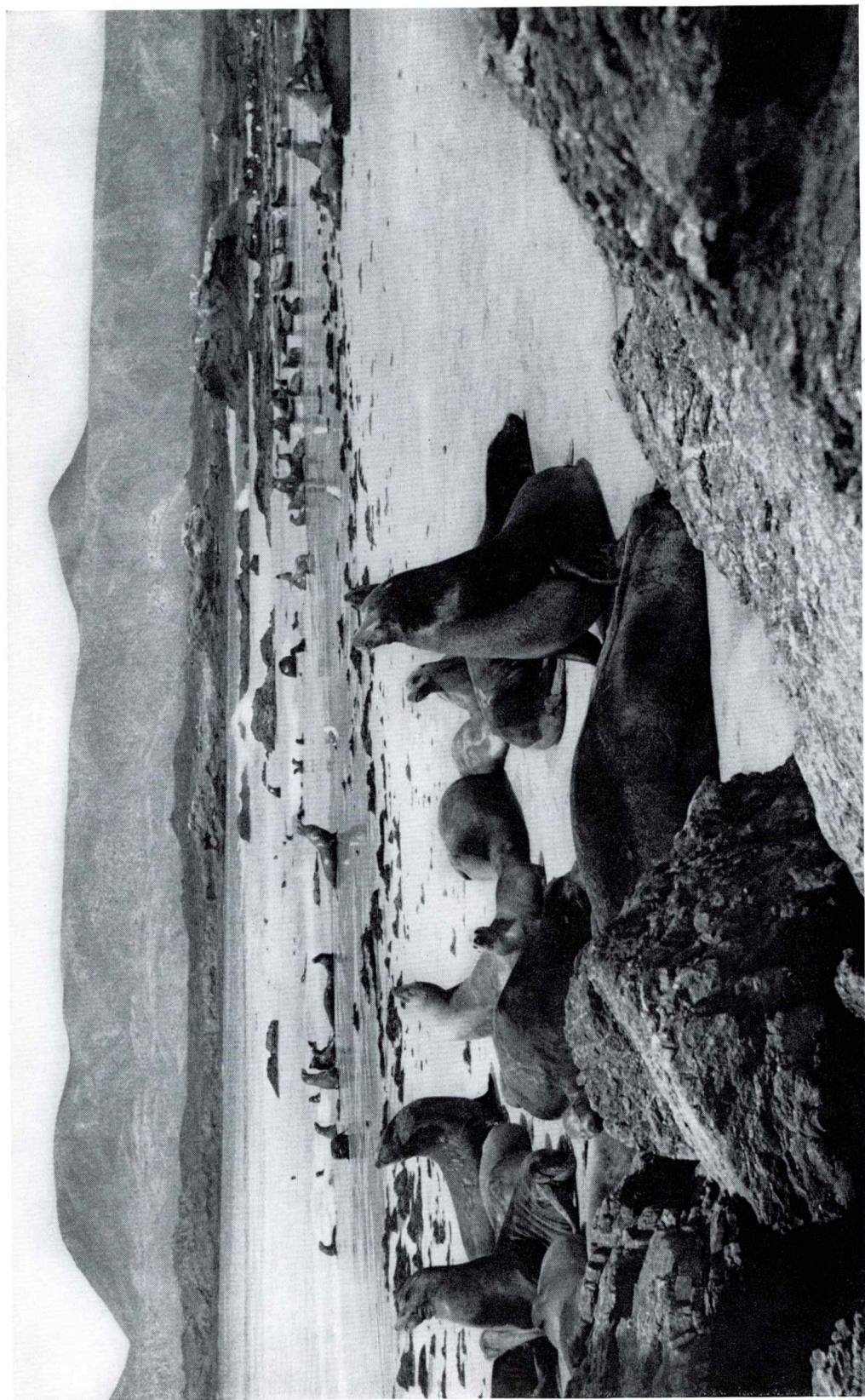
On the way from Benedicto northward to Natividad we had fine weather and, relieved of the pounding we had expected from strong head winds, came on the fourth day in sight of our destination. Natividad is a hilly island with extensive offshore reefs on the northeast side, over which combers roll white.

After the *Kinkajou* had been anchored well offshore, the going-ashore party loaded cameras and lunch in the skiff and started rowing. A big swell was rolling in and breaking waves were giving us trouble, when we saw a Mexican in the cove frantically motioning. We headed the way he pointed and made a landing of which we were proud.

Wind-swept, arid, and about four miles long, Natividad is not an island to attract travelers. The only trees are a few cardons. However, there is a large flat which would make an ideal airplane field, and which, because of the island's location midway down the coast of Baja California, could have a definite strategic value.

Ten Mexicans who live on the island as keepers of the light told us our schooner was the first boat except the lighthouse tender to stop there in two years. Of the last supply of water delivered to them only 230 gallons remained, and they were badly worried. They did not know when their supply ship would come.

Black-vented shearwaters had excavated nesting burrows all over the flat, which some day may be a haven of warplanes. When the Mexicans found we were looking for birds, they armed themselves with scoop shovels and started digging. The shearwaters were found about three feet underground, occasionally two in a burrow, but usually only one. A single egg is incubated in each nest.



Sea Lions of All Sizes and Ages Live Amicably in One Herd on the San Benito Islands

With the huge bulls are their mates and little ones. Several times the author observed old males, gathered peacefully in threes and fours, emitting noises which sounded like an attempt at a concert. Sea lions use all four flippers when walking. True seals employ only their fore flippers and pull along the hind part of their bodies.



Point a Camera at a San Benitos Elephant Seal, and It Opens Its Mouth and Says "Ah"

Ed Harrison, naturalist-photographer member of the expedition, comes in for a close-up (Plates IV and V and page 364). The beasts seem unafraid, but take to the water when anyone approaches too closely. This fellow puts up a bluff, but he will retreat if the photographer advances.

After we had explored all the nesting burrows desired, we tried to pay our helpers. One who could speak a little English refused our offer, saying, "Oh, no, it is our pleasure."

They brought us some skins of hair seals and pokes of dried crayfish as a parting gift. Then, noting that the surf was breaking badly, they volunteered to help us back to the boat. We gladly accepted the offer, for it was always a risk to carry our motion-picture cameras through the waves.

Sea Lions Roar on the San Benitos

After a stormy overnight run on which we had difficulty in keeping in our bunks, we anchored in a crescent-shaped harbor made by the three San Benito Islands. The largest, nearly 700 feet high, and clothed with yucca and cactus, is the home of the lighthouse keeper. Except for birds, sea lions, and elephant seals, the Middle and East Benitos are uninhabited.

Middle Benito lies low, with chimneys of rocks jutting from its crest. Extending seaward are lava rocks, and there is a fine beach, the hauling-out place for a great herd of California sea lions (page 362).

Hundreds of these creatures were asleep above the high-water mark, and others were going and coming through the constantly breaking wall of surf. Sleek females were accompanied by pups, and the gigantic males, hog fat, waddled here and there as if keeping a weather eye on their harems.

The bulls seemed to get along well together. There was a constant barking, of course, and an occasional snarl and baring of teeth, but we saw nothing that resembled genuine combat. In fact, here and there we observed three or more old bulls together going through a sort of ritual, bowing to each other and roaring in unison.

Apparently they were having a grand time, but their show seemed not to impress the females. The independent ladies merely yawned, stretched a flipper, and dropped off to sleep. Finding good cover, I crawled to within 20 feet of one group and took snapshots to my heart's content.

Birds were exceedingly numerous on both Middle and East Benito, particularly Wyman's gulls, which were just beginning to nest. They were tame, and when we were stalking game with our camera there were always a few of them settling down near at hand to see what we were doing.

Frazar's and black oyster-catchers were observed in the same flock; wandering tattlers, Hudsonian curlews, and black turnstones en route to their Alaskan nesting grounds were

resting on the reefs, and ospreys had nests on every promontory.

I put up a photographic blind near one of the fish-hawk (osprey) nests and the next day crawled in to take pictures. It was not long before the graceful bird dropped to her nest. When the camera started, however, she heard the whir and stared at the blind without moving. The young remained flattened in the nest, sensing from the adult's actions that danger was near. Though I remained three hours in the blind, the motion pictures might just as well have been stills (page 351).

The most numerous birds were San Lucas sparrows, which nest on the San Benitos and migrate down the Baja California peninsula. They occurred everywhere, but were especially numerous near a little seepage of fresh water—the only spring we found on any of these desert islands. Horned larks and rock wrens were also common. The ground was undermined with the burrows of petrels, auklets, and shearwaters, but the nesting season of the former had not begun, though we found a few birds occupying their intended nesting sites.

From the number of needles thrust into us to the square inch we judged that the San Benitos harbored more cacti than any other place we had visited. The cholla seemed deliberately to reach out to hit us. Even the old sea lions which had hauled out on some of the rock slopes were covered with the vicious spines.

Elephant Seals Nearly Exterminated

In years gone by elephant seals were found on many of the islands and on the peninsula of Baja California (Plates IV, V, VII and pages 338, 348, 349, 363).

They gradually disappeared, however, until all that remained were on Guadalupe Island, about 250 miles southwest of San Diego. Hide and oil hunters, who had exterminated the fur seals and sea otters of Guadalupe, turned their attention to the sea elephants with such ruthlessness that naturalists feared the great brutes would become extinct.*

Fortunately a few animals survived, and the herd grew. Numbers have been found in recent years on the San Benitos, but their presence here probably indicates a shift from one island to another, rather than any remarkable increase in the size of the colony.

East Benito, where the majority of the seals occur, is sharply indented by coves with shallow, boulder-strewn beaches, and steep walls hollowed near the sea. Occasional patches of

* See "A Cruise Among Desert Islands," by G. Dallas Hanna and A. W. Anthony, NATIONAL GEOGRAPHIC MAGAZINE, July, 1923.



Peeling Like a Sunburned Bather, an Elephant Seal Sheds Its Cuticle

The old skin and hair peel off in large flakes, leaving the new skin on the rough, corrugated neck a bright geranium pink (page 366).

black sand make ideal hauling-out places for the sea mammals. Because the waters drop off deep close to shore where waves pound continuously even on a calm day, there are comparatively few places on the seaward side where a skiff may be landed.

Our first day on this island was memorable. As our launch rounded the lower end, we saw herds of sea lions perched upon prominent rocks. They dived into the sea at our approach. A third of the way along the eastern shore we found a protected bay and on the black sand 30 or so elephant seals, females and young animals, sprawled sound asleep.

We ran a skiff through a wash of surf in the middle of the herd, and as it crashed upon the beach the nearest animals raised their heads sleepily and looked us over, not the least alarmed at our sudden invasion of their privacy. We stood motionless, expecting them, like the sea lions on the rocks, to scramble into the water, but instead they dropped their heads and resumed their slumbers.

Not a great deal is known about the habits of these strange creatures. Their large eyes indicate that they are nocturnal to a great extent, passing the day hauled out on the sand and the night obtaining food. Their food supply, except for squid, is not certainly known, except that captive individuals in zoological gardens thrive on fish, which they eat in quantity.

Monster Elephant Seals Spar for Fun

We had hoped to find many of the big males on the basking grounds, but most of the larger animals were in the water. They lolled lazily about, two big ones occasionally getting together, rearing out of the water, and roaring as they struck at each other. At first I thought they were fighting, but subsequent examination of our motion-picture film convinced me that they were merely sparring for pleasure, not taking hold with their tusks.

They were far from handsome. Sprawled out, they resembled huge, moldy sausages,

for they shed their hair and with it their external skin. They are brownish in color until this seasonal change begins to take place, and then they become splotched and scrofulous-looking. When the old epidermis and hair have peeled off, however, a new coat appears, dark Maltese in color. When wet it resembles velvet (page 365).

We had no difficulty studying the animals at close range. We could walk among them slowly, keeping out of reach of their sudden lunges. When disturbed, they would roar threateningly and attempt to charge, but were so clumsy that they were easily sidestepped. Pemberton on one occasion jumped out of the way of a cantankerous animal and into the path of another. The seal grabbed him by the back of the leg and made an ugly wound.

Seals' Flippers Are Land Propellers

Like all other true seals, these creatures use their fore flippers for propelling themselves on land, simply humping themselves forward and dragging their hindquarters, with little help from the rear flippers. This is in direct contrast to the sea lions, which use all four limbs to good effect.

In their colonies the seals are accustomed to being piled upon by others, and we found that we could walk on sleeping animals without disturbing them. Their hair is so short that flying insects bother them badly, and they fight these tormentors by flicking sand on their backs with their fore flippers (p. 349). Sitting down on one big fellow, Ed Harrison was apparently mistaken for a gnat—the seal began throwing a barrage of sand at him.

A few elephant seals now range northward to the islands off the California coast, and it is hoped their numbers will increase in our waters. The San Benito colonies are watched

over by the light keeper, who investigates every boat that anchors in the vicinity to make sure the herds are undisturbed. Requests have been made of the Mexican Government for concessions to take the seals for dog food, but the officials in Mexico City have the interest of the animals at heart and have given them all protection possible.

After our stay on the San Benitos it was necessary to push the *Kinkajou* toward home. The good weather we had experienced on our long northward run had passed. We left the San Benitos with a strong north wind blowing, and set sails to tack back and forth. At noon the next day our yacht had plowed through 132 miles of water and was only 50 miles north of our starting point! The wind increased to such an extent that the *Kinkajou* was headed westward, the sails helping to steady the boat and holding her well over.

In the midst of the blow, Bill Pemberton started along the lee side of his ship, holding to the railing. He was reaching for the logbook to make some entries when a wave hit us and put the rail down low. The surprised Bill went overboard without touching the rope!

Though he was dressed in heavy clothes and an overcoat, he managed to grab the log line as the ship sailed by. The speed of the boat pulled him beneath the water, however, and he had to let go.

He was lost to view in the rolling sea before the craft could be headed into the wind and brought about. Circling back in frantic haste, we threw him a line and pulled him from the cold water, chagrined but none the worse for his experience.

We caught a westerly wind off Guadalupe and made great time toward home, pausing only briefly at the Coronados, the last of the desert islands.

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